299-W10-170 (A7253)
Log Data Report

Borehole Information:

Borehole:		299-W10-170 (A7253)		Site:	Near 216-T-10 trench
Coordinates (WA St Plane)		GWL[1] (ft):	None	GWL Date:	01/31/08
North (m)	East (m)	Drill Date	TOC Elevation	Total Depth (ft)	Type
136835	567347	05/77	Not available	122	Unknown

Casing Information:

Casing Type	Stickup (ft)	Outer Diameter (in.)	Inside Diameter (in.)	Thickness (in.)	Top (ft)	Bottom (ft)
Welded steel	1.6	6 3/4	6 1/16	11/32	1.6	122

Borehole Notes:

The logging engineer measured the casing diameter with a caliper and steel tape. All log data are referenced to the top of casing.

Logging Equipment Information:

Logging System:	Gamma 4N		Type: Serial No.:	SGLS HpGe (60%) 45TP22010A
Effective Calibration Date:	09/20/07	Calibration Reference:	HGLP-CC-022, Rev. 1	
		Logging Procedure:	HGLP-MAN-002, Rev. 0	

Logging System:	Gamma 4H		Type: Serial No.:	NMLS H310700352
Effective Calibration Date:	11/06/07	Calibration Reference:	HGLP-CC-021	
		Logging Procedure:	HGLP-MAN-002, Rev. 0	

Spectral Gamma Logging System (SGLS) Log Run Information:

Log Run	1	2 Repeat		
Date	02/01/08	02/01/08		
Logging Engineer	Spatz	Spatz		
Start Depth (ft)	122.0	95.0		
Finish Depth (ft)	2.0	82.0		
Count Time (sec)	100	100		
Live/Real	R	R		
Shield (Y/N)	N	N		
MSA Interval (ft)	1.0	1.0		
Pre-Verification	DN941CAB	DN941CAB		
Start File	DN941000	DN941121		
Finish File	DN941120	DN941134		
Post-Verification	DN941CAA	DN941CAA		
Depth Return Error (in.)	- 3.0	- 0.5		
Comments	Fine gain adjustment after file -004	No fine gain adjustment		

Neutron Moisture Logging System (NMLS) Log Run Information:

Log Run	3	4		
Date	02/04/08	02/04/08		
Logging Engineer	Spatz	Spatz		
Start Depth (ft)	1.5	82.0		
Finish Depth (ft)	123.0	95.0		
Count Time (sec)	15	15		
Live/Real	R	R		
Shield (Y/N)	N	N		
MSA Interval (ft)	0.25	0.25		
Pre-Verification	DHA82CAB	DHA82CAB		
Start File	DHA82000	DHA82492		
Finish File	DHA82491	DHA82544		
Post-Verification	DHA82CAA	DHA82CAA		
Depth Return Error (in.)	- 0.5	- 1.5		
Comments	None	None		

Logging Operation Notes:

Logging was conducted with a centralizer on each sonde. All measurements are referenced to top of casing.

Analysis Notes:

Analyst:	Henwood	Date:	06/05/08	Reference:	GJO-HGLP 1.6.3, Rev. 0

Pre- and post-run verifications for the logging system were performed before and after each day's data acquisition. The acceptance criteria were met.

A casing correction for a 11/32-in. thick casing was applied to the SGLS data. NMLS data were corrected to percent volumetric moisture using calibration for a 6-in. ID casing.

SGLS spectra were processed in batch mode using APTEC SUPERVISOR to identify individual energy peaks and determine count rates. Concentrations were calculated with EXCEL worksheet templates identified as G4NSept07.xls using efficiency functions and corrections for casing, dead time, and water as determined from annual calibrations.

Results and Interpretations:

Cs-137 was detected at 2 ft (ground surface after correcting for stickup) at 0.2 pCi/g.

Repeat sections acquired for the logging system indicate good repeatability.

List of Log Plots:

Depth Reference is top of casing

Manmade Radionuclides
Natural Gamma Logs
Combination Plot
Total Gamma, Dead Time, & Moisture
Repeat Section of Natural Gamma Logs
Repeat of Moisture

[1] GWL – groundwater level

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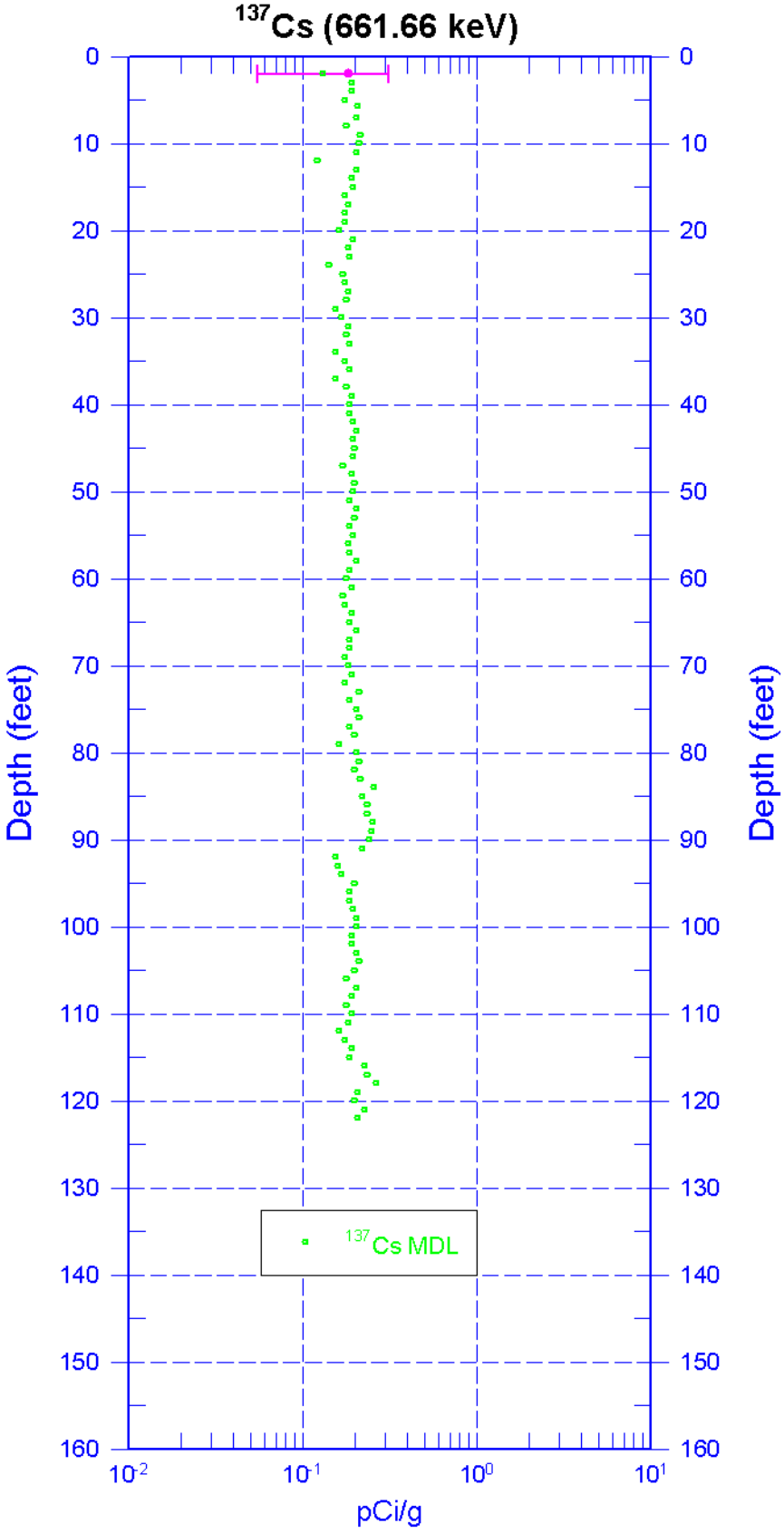
299-W10-170 (A7253)
Manmade Radionuclides



Zero Reference - Top of Casing

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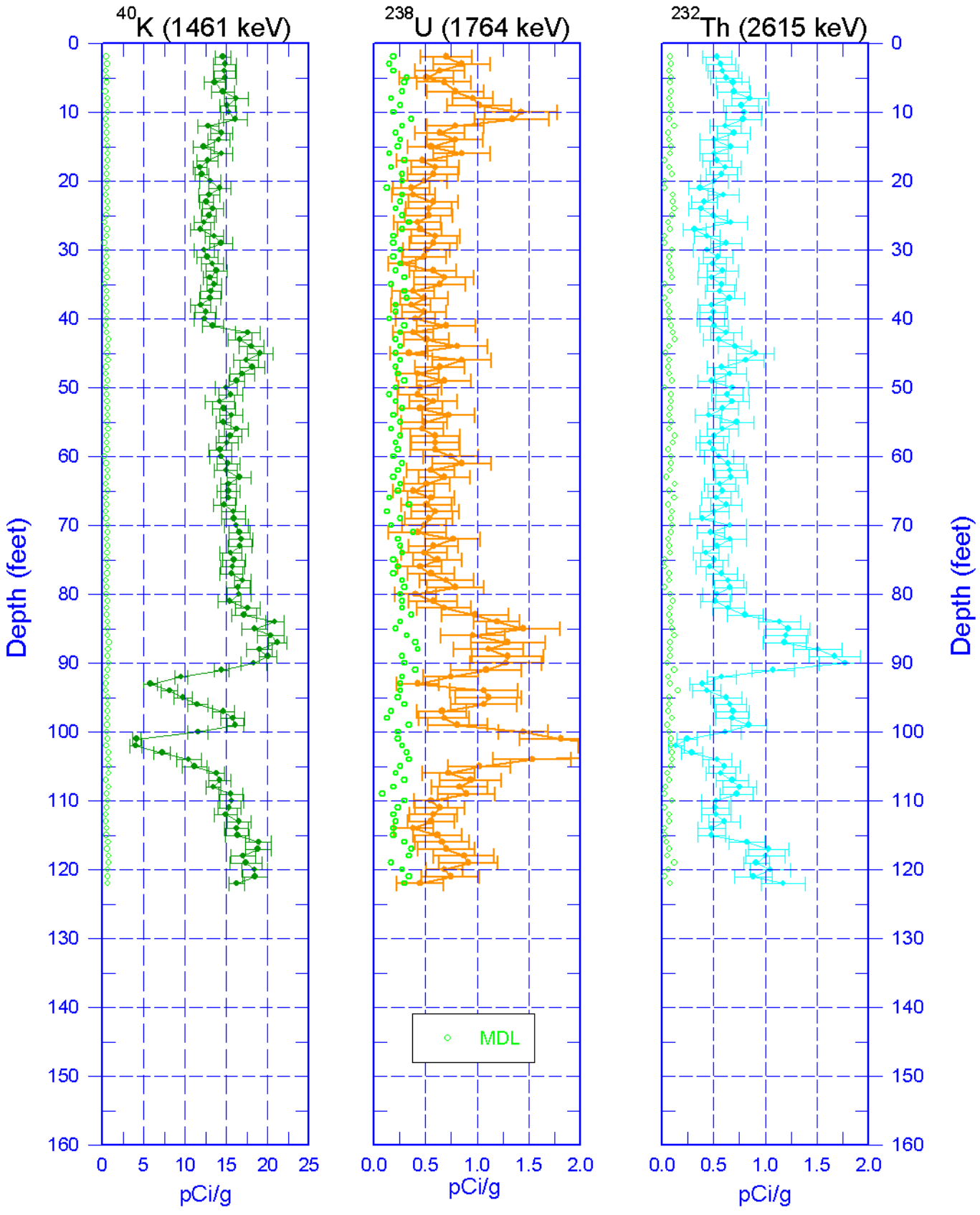
299-W10-170 (A7253)
Natural Gamma Logs



Zero Reference = Top of Casing

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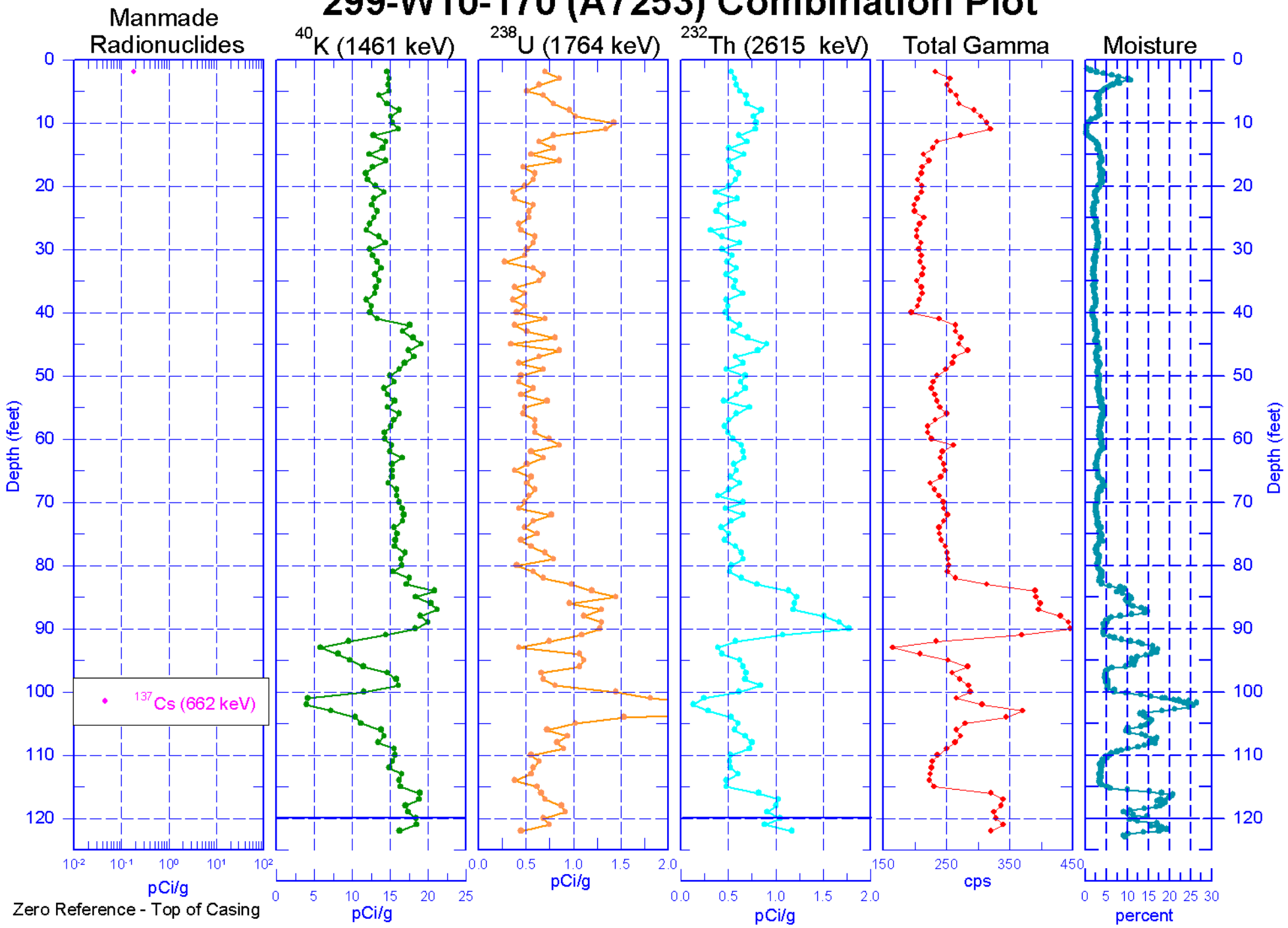
299-W10-170 (A7253) Combination Plot



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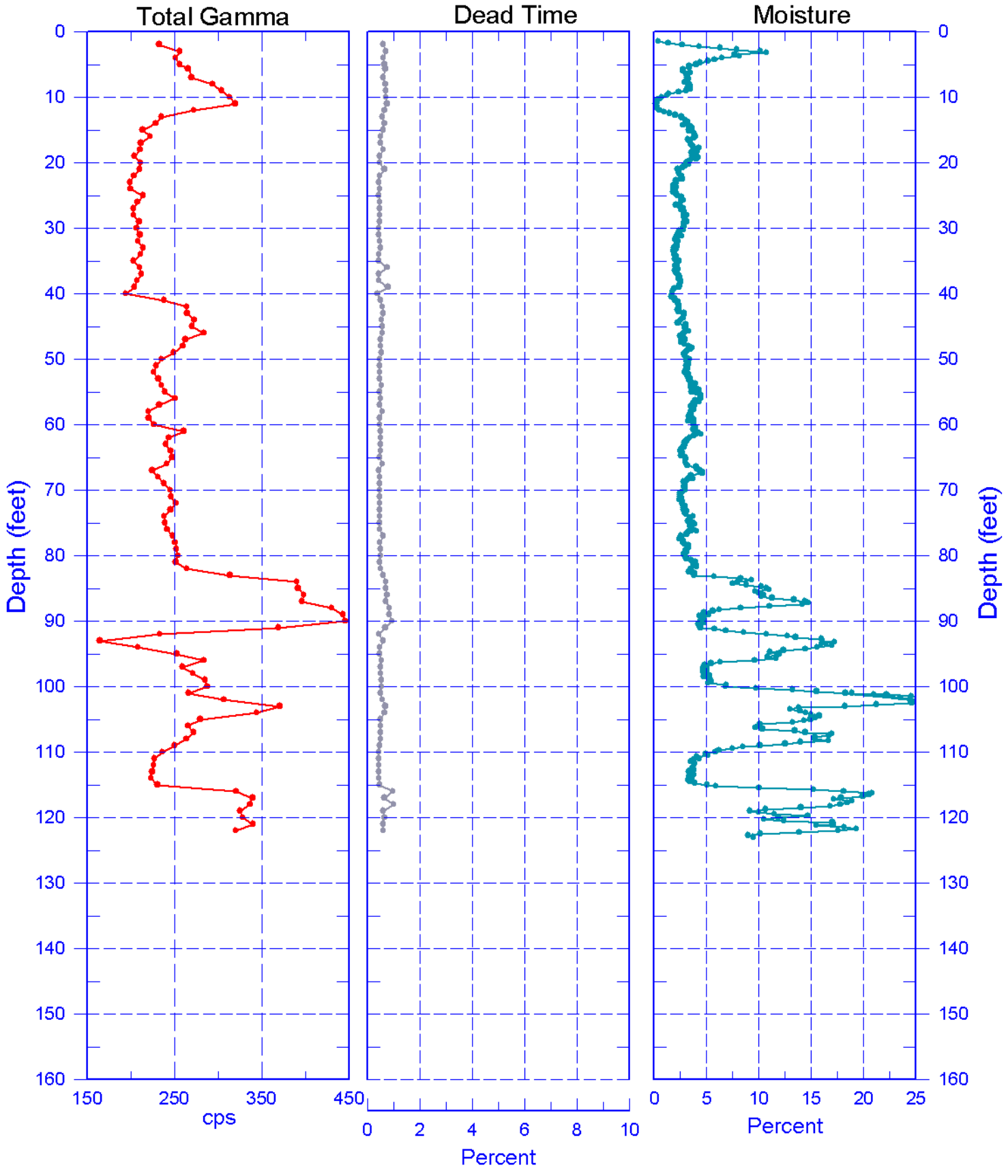
299-W10-170 (A7253)

Total Gamma, Dead Time & Moisture



Reference - Top of Casing

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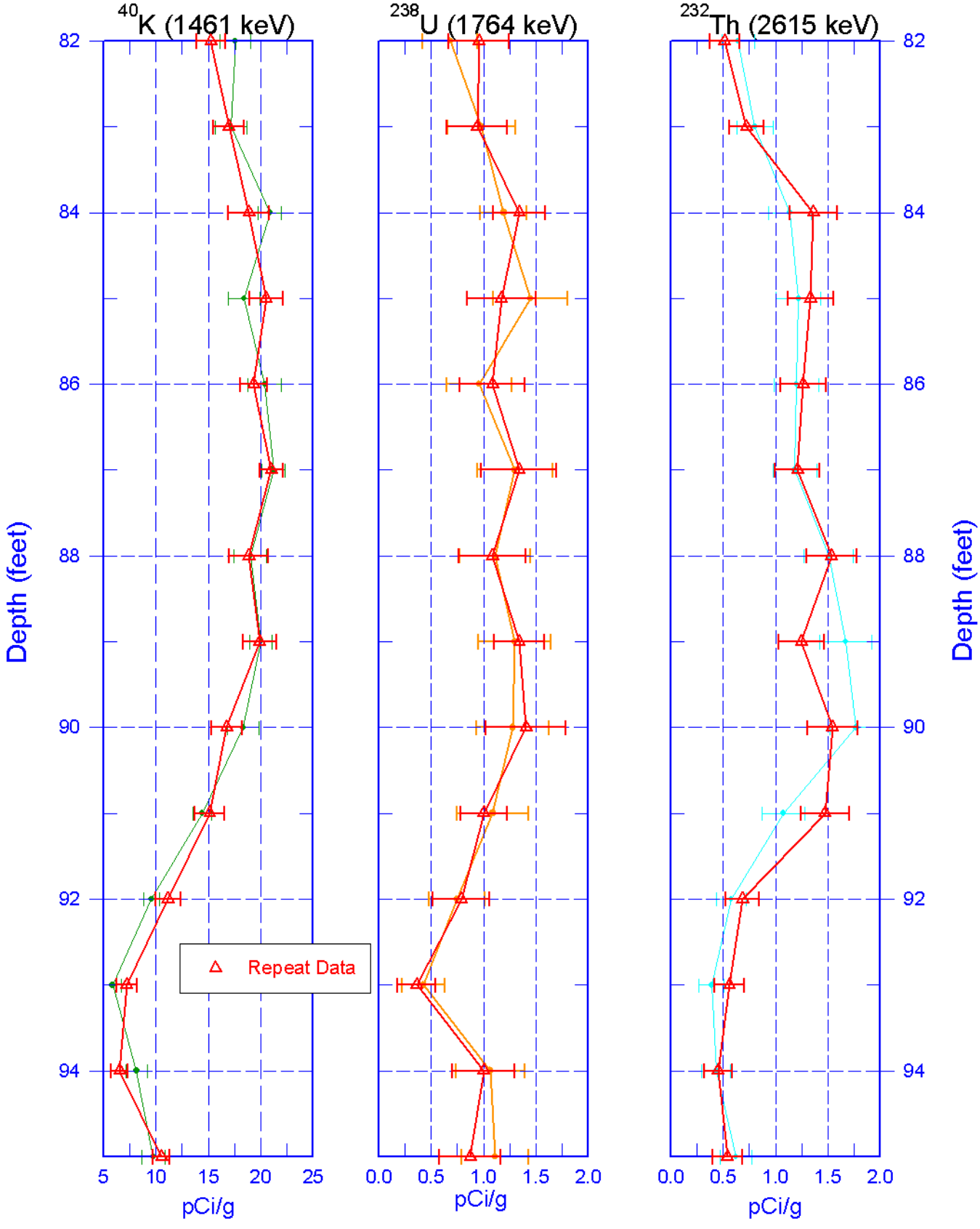
299-W10-170 (A7253)

Repeat of Natural Gamma Logs



Zero Reference = Top of Casing

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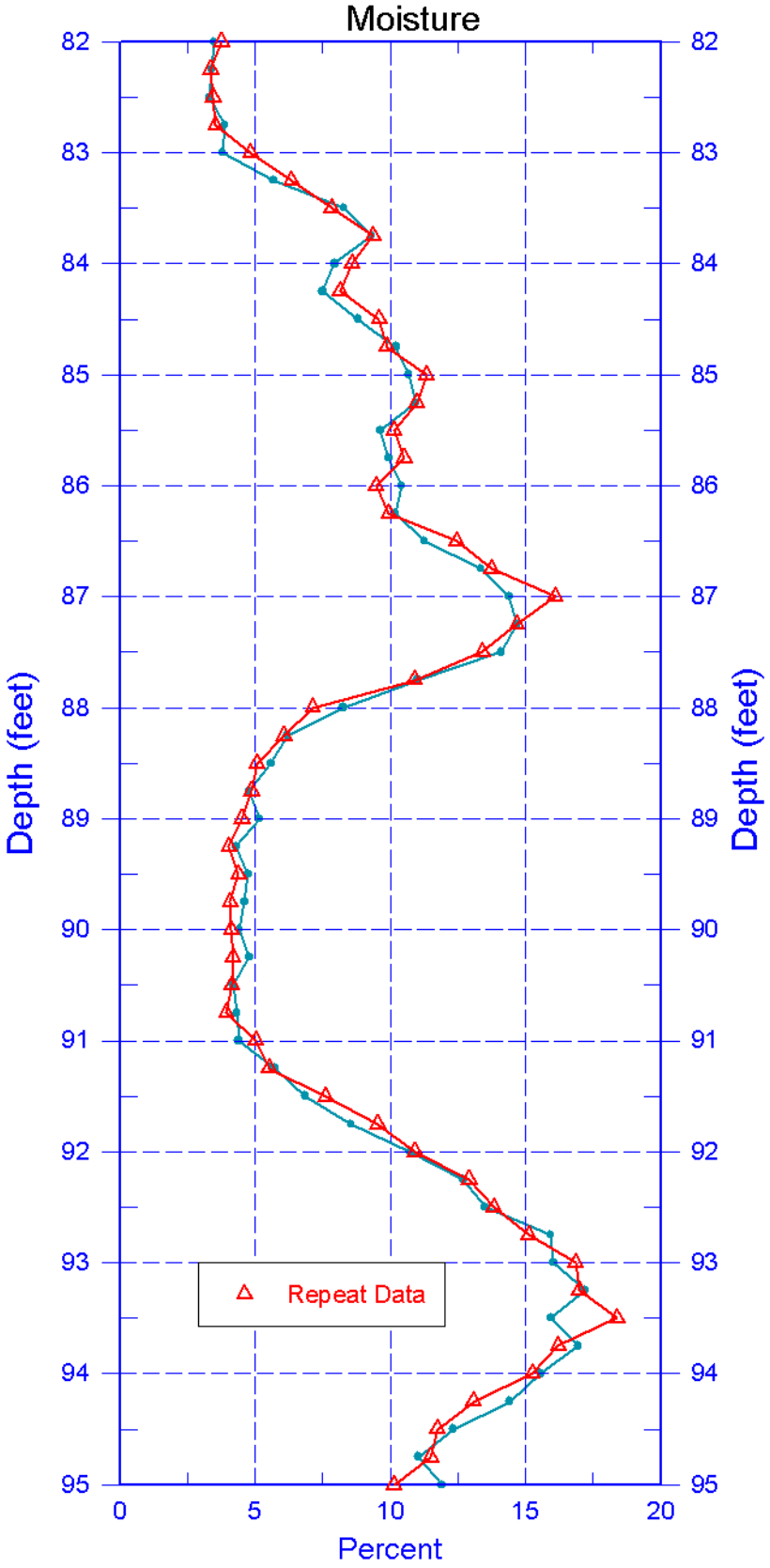
299-W10-170 (A7253)

Repeat of Moisture



Reference - Top of Casing